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Reconsidered.
11-29-02
Patent
Attorney's Docket No. 032287-001 *MJF*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Johann PFEIFFER) Group Art Unit: 2664
Application No.: 08/981,519) Examiner: Steven Nguyen
Filed: March 17, 1998) Confirmation No.: 8175
For: METHOD AND BI-DIRECTIONAL)
DATA TRANSMISSION OVER A)
TWO-WIRE LINE)
)
)

REQUEST FOR RECONSIDERATION

Assistant Commissioner for Patents
Washington, D.C. 20231

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Technology Center 2800

Sir:

In response to the Office Action issued on May 24, 2002, reconsideration and allowance of the above-identified application are respectfully requested. Claims 2-11 remain pending.

Initially, Applicant would like to thank Examiner Nguyen for his time and courtesy during the personal interview conducted with the undersigned on August 1, 2002. During the personal interview, the Examiner and the undersigned discussed the new matter rejections and the obviousness rejections. In addition, the undersigned explained to the Examiner that the argument on pages 5 and 6 of the After Final Request for Reconsideration may have been incorrect. Specifically, on these pages Applicant argued that one of ordinary skill in the art would not have been motivated to combine Grube and Bader because the system of Grube does not experience leakage current due to Grube's use

of echo cancellation circuitry. However, as discussed during the personal interview, there may remain a small part of the transmission signal which the echo cancellation circuitry cannot correct. The Examiner explained to the undersigned that these arguments did not influence the Examiner's decision to change his grounds of rejection.

In the first paragraph of the Office Action the Amendment filed on October 18, 2001 is objected to under 35 U.S.C. § 132 because it allegedly introduces new matter into the disclosure. This objection is respectfully traversed.

The Office Action asserts that new figure 3 introduces new matter into the specification. New figure 3 is based on originally filed figure 1. Specifically, originally filed figure 1 illustrates a single data station, while figure 3 illustrates a central data station connected to a peripheral data station. As discussed during the personal interview, the present application, at least at page 7, lines 4-13, provides support for the new figure 3. This section states that in figure 1 of the present application "the transmission and reception sections 50, 51 both of a central data station C (CENTRAL) and of a peripheral data station R (REMOTE) are illustrated in a single block diagram." This section continues by stating that "the central data station C is connected to the data station R via the transformer 13, the two-wire line 100 and a further transformer 13."

Figure 3 illustrates a central data station C and a peripheral data station R both containing a transmission section containing a DMT modulator, a reception section containing a DMT demodulator, a TDM manager, and a transformer 13. Figure 3 also illustrates a transmission line 100 connected between a transformer 13 of the central data station C and the transformer 13 of the peripheral data station R. Since the present

application clearly describes that both the central data station and the peripheral data station would comprise the elements illustrated in figure 3, it is respectfully submitted that figure 3 does not introduce new matter into the application. The other portions of the Amendment filed on October 18, 2001 which are objected to all relate to the new figure 3, and hence, it is respectfully submitted that these portions do not introduce new matter into the application.

For at least those reasons stated above, it is respectfully requested that the objection to the Amendment filed October 18, 2001 for allegedly introducing new matter be withdrawn.

In the fourth paragraph of the Office Action claims 2, 8, 9 and 11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,619,505 to Grube et al. ("Grube") in view of "Dynamic Frame Control For TDD Based Wireless LAN" by Kim et al. ("Kim"). This ground of rejection is respectfully traversed.

As discussed during the personal interview, exemplary embodiments of the present invention are directed towards a system which separates discrete multitone (DMT) modulated digital data to be transmitted from DMT modulated digital data to be received by time division multiplexing (TDM). As discussed in the Background section of the present application, at the time of the invention there were two known techniques for separating DMT modulated data to be transmitted and DMT modulated data to be received, frequency division multiplexing and echo cancellation.

Claim 8 recites the steps of "modulating and demodulating the digital data using discrete multitone modulation" and "separating digital data to be transmitted and the digital data to be received by time division multiplex operation."

To reject Applicant's claim 8 the Office Action cites Grube for the disclosure of DMT modulation, while acknowledging that Grube does not disclose the use of time division multiplexing to separate digital data to be transmitted and the digital data to be received. As discussed during the personal interview, instead of employing time division multiplexing to separate DMT modulated information to be transmitted from DMT modulated information to be received, Grube discloses employing either separate transmission lines (Figure 8 embodiment of Grube) or by employing echo cancellation circuitry (Figure 9 embodiment of Grube).

To remedy this deficiency of Grube, the Office Action cites Kim. Kim discloses a wireless LAN which employs a bi-directional frame which is divided into slots which are dynamically assigned between uplink and downlink transmissions. However, Kim does not disclose or suggest that it would have been desirable to separate DMT modulated information to be transmitted from DMT modulated information to be received by time division multiplexing. Moreover, since Grube does not disclose a system which separates DMT modulated information to be transmitted from DMT modulated information to be received by time division multiplexing, it is respectfully submitted that one of ordinary skill in the art would not have been provided with any information as to how such a system could be implemented.

Moreover, it is respectfully submitted that due to the nature of DMT modulation, one of ordinary skill in the art would have considered it impractical to separate DMT modulated information to be transmitted from DMT modulated information to be received using time division multiplexing. The transmission of DMT modulated information requires that the previously transmitted DMT signal decay, and the new DMT transmitted signal to ramp up to the proper level, for the DMT modulated information be to successfully received. If DMT modulated information to be transmitted and DMT modulated information to be received were time division multiplexed, due to the time period for the previously transmitted DMT signal to decay and the new DMT signal to ramp up to the proper level, the delay and other characteristics of the transmission medium would have to be taken into account for both the upstream and the downstream transmitters. It is respectfully submitted that this delay and the other characteristics of the transmission medium would have lead one of ordinary skill in the art away from separating DMT modulated information to be transmitted from DMT modulated information to be received by time division multiplexing due to, *inter alia*, the strict timing requirements of time division multiplexing. Grube and Kim both do not even recognize that such a problem would exist, much less how to overcome such a problem when upstream and downstream channels of DMT modulated information is separated by time division multiplexing.

Since Grube and Kim both do not disclose or suggest how to separate upstream and downstream transmission of DMT modulation by time division multiplexing, it is respectfully submitted that the combination of Grube and Kim does not render Applicant's claim 8 unpatentable.

Claims 2 and 9 depend from claim 8, and are, therefore, patentably distinguishable over the combination of Grube and Kim for at least those reasons stated above with regard to Applicant's claim 8.

Claim 11 recites a system with similar elements to those discussed above with regard to Applicant's claim 8, and hence, claim 11 is patentably distinguishable over the combination of Grube and Kim for similar reasons to those stated above with regard to Applicant's claim 8.

For at least those reasons stated above, it is respectfully requested that the rejection of claims 2, 8, 9 and 11 as allegedly being unpatentable over the combination of Grube and Kim be withdrawn.

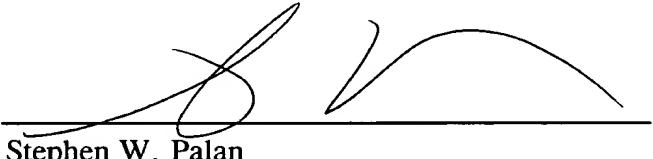
In the fifth paragraph of the Office Action claim 3 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combination of Grube, Kim and U.S. Patent No. 4,144,522 to Kageyama et al. ("Kageyama"). In the sixth paragraph of the Office Action claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Grube, Kim and U.S. Patent No. 3,798,608 to Huebner ("Huebner"). In the seventh paragraph of the Office Action claims 6 and 10 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combination of Grube, Kim and U.S. Patent No. 5,625,651 to Cioffi ("Cioffi"). In the eighth paragraph of the Office Action claim 7 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combination of Grube, Kim and U.S. Patent No. 5,151,896 to Bowman et al. ("Bowman"). These grounds of rejection are respectfully traversed.

Claims 3-7 and 10 variously depend from claim 8. As discussed above, the combination of Grube and Kim does not disclose or suggest all of the elements of Applicant's claim 8. Moreover, it is respectfully submitted that Kageyama, Huebner, Cioffi and Bowman all do not remedy the above-identified deficiencies of the combination of Grube and Kim with respect to Applicant's claim 8. Accordingly, it is respectfully submitted that claims 3-7 and 10 are patentably distinguishable over the various obviousness combinations at least by virtue of their dependency upon claim 8. Accordingly, withdrawal of the rejection of claims 3-7 and 10 is respectfully requested.

All outstanding objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance. Notice to this effect is earnestly solicited. If there are any questions regarding this response or the application in general, the Examiner is encouraged to contact the undersigned at 703-838-6578.

Respectfully submitted,

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